

# Symposium

## Introduction

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### Cardiac Arrest Care

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Methods used to attempt resuscitation of persons who experience sudden death date back centuries,<sup>1</sup> but it was not until Kouwenhoven et al<sup>2</sup> published their findings on “closed-chest massage” that a new era of cardiac resuscitation began. Their work, along with advances in defibrillation, medications, airway management, and protocolizing basic and advanced cardiac life support, has helped move forward the science of resuscitation and the care provided by critical care and advanced practice nurses to improve morbidity and mortality after cardiac arrest.

Statistics related to cardiac arrests often differentiate the site of the event, with out-of-hospital cardiac arrests (OHCA) having a higher incidence (365 000) than in-hospital cardiac arrests (IHCA) (209 000).<sup>3,4</sup> The disparity in causes and outcomes is also reported by site of event. Out-of-hospital cardiac arrests carry a mortality of approximately 90% and are caused mainly by acute coronary syndrome and respiratory failure.<sup>5</sup> In-hospital cardiac arrests carry a mortality rate of 86.6% and are often multifactorial in cause (respiratory failure, acute coronary syndrome, and/or more than 2 causes).<sup>5,6</sup> In a meta-analysis of IHCA by Schluep et al,<sup>6</sup> higher survival to discharge was found in patients with strictly cardiac etiologies (39.3%), but overall survival in OHCA and IHCA has only slightly improved over the past decade.

In this symposium series, authors address issues related to improving the care of patients experiencing cardiopulmonary arrest. Post-cardiac arrest syndrome (PCAS) occurs as a result of ischemic-reperfusion injury and involves global brain injury and myocardial and macrocirculatory dysfunction, among other complications. Dalessio discusses the ischemic-reperfusion pathophysiology that causes PCAS and reviews current treatments and potential novel therapies to mitigate its deadly consequences. Acknowledging that administering medications during a cardiac arrest can be stressful, Teevan and Perriello follow with an article on the pharmacology of advanced cardiac life support medications, including their indications, actions, and administration methods. The authors provide the latest information on use of these medications and special considerations for critical care providers with the hope that improved understanding can assist in mitigating stress about their use among providers. Finally, Kaplow and colleagues report findings on their IHCA cardiopulmonary resuscitation research evaluating the association between patient survival

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The author declares no conflicts of interest.

DOI: <https://doi.org/10.4037/aacnacc2020291>

and 2 variables: adherence to resuscitation guidelines and patient severity of illness. Their work illustrates the importance of basic life support skills on survival, and they provide recommendations regarding further research in this area to continue to improve IHCA survival.

This series on cardiac arrest care, resuscitation, and the aftermath of PCAS seeks to provide updated information that will help you with these high-stress and high-stakes events that critical care and advanced practice nurses frequently encounter. We hope that the information provided can be useful in your practice during and after cardiac arrests.

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